

QA: QA

**U. S. DEPARTMENT OF ENERGY
OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT
OFFICE OF QUALTY ASSURANCE**

AUDIT REPORT YMSCO/M&O-ARC-00-11

OF THE

YUCCA MOUNTAIN SITE CHARACTERIZATION OFFICE

AND THE

**CIVILIAN RADIOACTIVE WASTE MANAGEMENT SYSTEM
MANAGEMENT AND OPERATING CONTRACTOR**

AT

LAS VEGAS, NEVADA

AUGUST 7 - 11, 2000

Prepared by: _____ Date: _____

**E. S. Jensen
Audit Team Leader
Office of Quality Assurance/
Quality Assurance Technical
Support Services**

Approved by: _____ Date: _____

**Robert W. Clark
Director
Office of Quality Assurance**

1.0 EXECUTIVE SUMMARY

As a result of Quality Assurance (QA) compliance-based audit YMSCO/M&O-ARC-00-11, the audit team determined that, with the exception of those areas where conditions adverse to quality were identified, the Yucca Mountain Site Characterization Office (YMSCO) and the Civilian Radioactive Waste Management System Management and Operating Contractor (CRWMS M&O) are satisfactorily and effectively implementing the examined portions of the U.S. Department of Energy (DOE), Office of Civilian Radioactive Waste Management (OCRWM) Quality Assurance and Requirements (QARD), DOE/RW-0333P, Revision 10, and applicable implementing procedures.

The Office of Quality Assurance (OQA) combined the YMSCO and CRWMS M&O activities into this one audit based on the integration of procedural processes. However, the overall results are provided for each organization separately so that any corrective actions necessary can be provided by the respective organization.

YMSCO

QA Program elements 1.0, 2.0, 4.0, 5.0, 6.0, 7.0, 15.0, 16.0, Supplements II, III, and Appendix C were determined to be effectively implemented based on activities evaluated during the audit. Program elements not evaluated either did not apply or were previously evaluated through other audits or surveillances.

The audit team identified conditions adverse to quality that resulted in the issuance of one Deficiency Report (DR). DR YMSCO-00-D-131 was issued to address YMSCO's failure to submit QA records produced by work performed under a procurement action to the Records Processing Center (RPC).

The audit team evaluated the effectiveness of corrective actions for one previously issued YMSCO deficiency. The audit team determined the corrective actions to be effective. The evaluation results are documented in Section 5.5.5 of this report.

CRWMS M&O

QA Program elements 1.0, 2.0, 3.0, 5.0, 6.0, 7.0, 8.0, 9.0, 12.0, 13.0, 14.0, 15.0, 16.0, Supplements II, IV, and Appendix C were determined to be effectively implemented based on activities evaluated during the audit. Program elements not evaluated either did not apply or were previously evaluated through other audits or surveillances.

The audit team identified conditions adverse to quality that resulted in the issuance of one DR, LVMO-00-D-130, one Deficiency Identification and Referral (DIR)-00-20, and three conditions adverse to quality that were considered isolated and Corrected During the Audit (CDA).

DR LVMO-00-D-130 identified that the CRWMS M&O failed to revise an Interface Control Document to reflect the current organization interfaces. DIR-00-20 identified that the position of Job Package Records Coordinator, referred to in Yucca Mountain Site

Characterization Project Administrative Procedure (YAP)-3.7Q, Revision 1, “Request for Clarification,” is nonexistent. The DIR refers resolution of the condition to DR LVMO-00-D-110, which identified a similar condition.

The audit team identified three conditions adverse to quality requiring only remedial actions that were CDA. CDA #1 identified that a Peer Review Report was incomplete. The omitted appendix was produced and transmitted to the RPC. CDA #2 identified the nonexistence of the “Change Control Board Required Review List (CCBRRL),” which is referred to in a number of procedures. Document Action Requests (DAR) were submitted to delete the references. CDA #3 identified the lack of documented delegation of authority to perform certain responsibilities of the Site Facilities Office Manager. The required document was completed and issued.

The audit team evaluated the effectiveness of corrective actions for 11 previously issued CRWMS M&O deficiencies. In each instance the audit team determined the corrective actions to be effective. The evaluation results are documented in Section 5.5.5 of this report.

In addition, there were six recommendations resulting from the audit as documented in Section 6.0 of this report for the CRWMS M&O management consideration.

2.0 SCOPE

Auditors representing the DOE OQA conducted a compliance-based audit to evaluate the YMSCO and CRWMS M&O implementation of the OCRWM QA Program, as described in the QARD and implementing procedures. The audit team, through interviews of cognizant personnel, reviews of documentation, and evaluation of procedures assessed implementation, adequacy, and effectiveness of YMSCO and CRWMS M&O implementation of the QA Program.

The audit team reviewed the status of OCRWM deficiency documents generated during previous OQA audits and surveillances to determine the effectiveness of in-process and completed corrective actions by YMSCO and CRWMS M&O.

In accordance with the approved audit plan, the following QA Program elements were evaluated for both YMSCO and CRWMS M&O.

1.0	Organization
2.0	Quality Assurance Program
5.0	Implementing Documents
6.0	Document Control
7.0	Control of Purchased Items and Services
15.0	Nonconformances
16.0	Corrective Action
Supplement II	Sample Control
Appendix C	Monitored Geological Repository

The following elements were evaluated for YMSCO only.

4.0	Procurement Document Control
Supplement III	Scientific Investigation

The following elements were evaluated for CRWMS M&O only.

3.0	Design Control
8.0	Identification and Control of Items
9.0	Control of Special Processes
12.0	Control of Measuring and Test Equipment
13.0	Handling, Storage and Shipping
14.0	Inspection, Test and Operating Status
Supplement IV	Field Surveying

Certain Program elements were not considered for review because:

- an element was shown to be not applicable to the scope of an organization's performance responsibilities;
- there had been no implementation since the last audit of an element; or
- an element has undergone review by other means (previous performance-based audits or surveillances).

The audit was conducted at the YMSCO and CRWMS M&O offices in Las Vegas, Nevada.

3.0 AUDIT TEAM MEMBERS

The following is a list of audit team members and assigned areas of responsibility.

<u>Name/Title/Organization</u>	<u>QA Program Elements</u>
E. S. Jensen, Audit Team Leader, OQA/Quality Assurance Technical Support Services (QATSS)	1.0, 2.0, 16.0, Supplements II & III
S. E. Archuleta, Auditor-in-Training, OQA/QATSS	2.0, 6.0
V. J. Barish, Auditor, OQA/QATSS	3.0, 8.0, 9.0, 12.0, Supplement II
J. K. Devers, Auditor, OQA/QATSS	4.0, 7.0, Appendix C
J. R. Doyle, Auditor, OQA/QATSS	3.0
J. F. Graff, Auditor, OQA/QATSS	2.0, 5.0, 6.0
G. T. Harper, Auditor, OQA/QATSS	3.0
P. R. West-Thompson, Auditor, OQA/QATSS	2.0, 5.0, 6.0
C. D. Wright, Auditor, OQA/QATSS	13.0, 14.0, 15.0, Supplement IV

4.0 AUDIT MEETINGS AND PERSONNEL CONTACTED

A pre-audit meeting was held at the CRWMS M&O offices in Las Vegas, Nevada, on August 7, 2000. Daily debriefings were conducted to apprise YMSCO and CRWMS M&O management and staff of the audit progress and any conditions adverse to quality. A post-audit meeting was held at the CRWMS M&O offices in Las Vegas, Nevada, on August 11, 2000. Personnel contacted during the audit, including those who attended the pre-audit and post-audit meetings, are listed in Attachment 1, "Personnel Contacted During the Audit."

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Effectiveness

The audit team concluded that, with the exception of those areas where conditions adverse to quality were identified, YMSCO and CRWMS M&O are satisfactorily and effectively implementing the examined portions of the QARD and applicable implementing procedures.

5.2 Stop Work or Immediate Corrective Actions Taken

There were no Stop Work Orders or immediate corrective actions as a result of the audit.

5.3 QA Program Audit Activities

Attachment 2, "Summary Table of Audit Results," provides the results for each QA Program element audited. Details of audit activities, including objective evidence reviewed, are documented in the audit checklists. The checklists are maintained as QA records.

5.4 Technical Audit Activities

An audit of technical activities was not included in the scope of the audit.

5.5 Summary of Conditions Adverse to Quality

Two deficiency documents with conditions adverse to quality were issued as a result of this audit. One DR was issued to YMSCO and one DR to the CRWMS M&O. Details of the deficiencies are detailed in Section 5.5.2 of this report. DIR-00-20 was issued to DR LVMO-00-D-110 and is detailed in Section 5.5.3. Three conditions adverse to quality identified required only remedial actions and were CDA. Details of the CDAs are documented in Section 5.5.4 of this report.

5.5.1 Corrective Action Requests (CAR)

None.

5.5.2 Deficiency Reports (DR)

LVMO-00-D-130

Document B00000000-01717-00015, Revision 00, "Interface Control Document," dated October 31, 1998, has not been revised to reflect current organizational interfaces.

YMSCO-00-D-131

QA records produced by work performed under the procurement actions noted below were not submitted to the RPC in the time frame required by Administrative Procedure (AP)-17.1Q, Revision 1, ICN 2, "Record Source Responsibilities for Inclusionary Records," Subsection 5.7.

- Cooperative Agreement with Community College Systems of Nevada (DE FC08-98NV12081)
- Interagency Agreement with United States Geological Survey (DE-A108-97NV12033)

5.5.3 Deficiency Identification and Referrals (DIR)

DIR 00-20

YAP-3.7Q, Subsection 5.4, requires that Requests for Clarification be submitted to the Job Package Records Coordinator to be inserted into the Job Package Records Package in accordance with YAP-17.2Q, Revision 2, ICN 1, "Job Package Completion and Records." The position of Job Package Records Coordinator is nonexistent. OQA surveillance LVMO-SR-00-009 identified a similar condition, which led to DR LVMO-0-D-110. This condition adverse to quality has been referred to that DR by means of DIR-00-20.

5.5.4 Deficiencies Corrected During the Audit (CDA)

Deficiencies considered isolated in nature and requiring only remedial action may be corrected during the audit. The following deficiencies applicable to the CRWMS M&O were identified and corrective actions as described were taken during the audit.

1. The Peer Review Report, "Peer Review for the YMP Predictions of Drift Seepage into the Proposed Repository at Yucca Mountain," dated June 19, 2000, did not include the Listing of Panelists with the

required supporting information. During the audit, Appendix A of the subject Peer Review Report was corrected and submitted to the RPC as a correction to the original record package.

2. A number of procedures, e.g., AP-3.4Q, Revision 1, ICN 3, "Level 3 Change Control;" AP-3.10Q, Revision 2, ICN 3, "Analysis and Models;" and AP-3.11Q, Revision 1, ICN 1, "Technical Reports," refer the procedure performer to the "CCBRRL on the M&O Intranet" to determine if a document development/revision action requires action by the Change Control Board (CCB). The CCBRRL on the CRWMS M&O Intranet is blank. On the basis that the CCBRRL has not been developed and no need for it has been shown in practice, DARs were submitted to delete the reference.
3. AP-2.17Q, Revision 0, ICN 0, "Tracers, Fluids, and Materials Data Reporting and Management," Section 5.4.1c), requires the Responsible Reporting Organization Manager to sign completed Tracers, Fluids, and Materials (TFM) reports. NWI-ESF-016Q, Revision 1, ICN 1, "Tracers, Fluids, and Materials Estimating, Accounting, and Reporting," Section 3.5.1.b, requires the Site Facilities Office Manager or Designee to sign the TFM Actual Use Report. Contrary to these requirements, proper delegation of authority had not been made to the routine signatory of these reports. This deficient condition was corrected during the audit with the issuance of CRWMS M&O Interoffice Correspondence LV.SCO.RRD.8/00-021, dated August 11, 2000, Subject: Assignment of TFM Designee, which formally identified the TFM Designee to act in this regard for the Site Facilities Office Manager.

5.5.5 Follow-up of Previously Identified Conditions Adverse to Quality

YMSCO

YMSCO-99-D-102

The DR identified documents on the OCRWM Program Documents database as available for use, when those documents were known to have been cancelled or superseded by other documents on the database.

Corrective actions involved a review of the database, cancellation of identified procedures, and revisions to other procedures to improve the clarity of the interface between a document developer and the Document Control Center.

As evidenced by the issuance of DR LVMO-00-D-082 (see below), the completed corrective actions were ineffective.

CRWMS M&O

LVMO-99-P-005

The Performance Report noted the failure to videotape certain borehole samples after staging and prior to packaging. Videotapes of recent borehole logging activities were reviewed and no further discrepancies were identified.

LVMO-99-D-046

The DR noted the failure to complete the Tunnel Water Use Log between April 30, 1998, and April 20, 1999. A sample of water use logs and reports prepared since that time was reviewed and no further discrepancies were identified.

LVMO-99-D-058

The DR noted that the controlling document did not provide processes that complied with certain requirements of the QARD as those requirements related to the use of TFM. The revised procedure and recent TFM reports were reviewed. No further discrepancies were identified.

LVMO-99-D-062

The DR noted the lack of training documentation applicable to two persons working in meteorology and air quality and the lack of calibration of an analytical balance. Recent procedure development and calibration activities were reviewed. No further discrepancies were identified.

LVMO-99-D-064

The DR noted that certain Calibration Data Packages and Survey Field Notes did not contain information required by the controlling document. Measuring and Test Equipment (M&TE) logs related to specific equipment were reviewed and no further discrepancies were identified.

LVMO-99-D-065

The DR noted that certain records had not been corrected in accordance with applicable record management requirements. A sample of Fluid Records/Activity Logs was evaluated and no further discrepancies were identified.

LVMO-99-D-071

The DR noted that Global Positioning System (GPS) equipment was not identified in the CRWMS M&O M&TE calibration inventory. The controlling document was revised to include the GPS. GPS Equipment Usage Logs were reviewed. No further discrepancies were identified.

LVMO-00-D-045

The DR noted that Training Assignments (TA) had not been developed for a number of employees transferred into the Engineered Barriers System organization from other departments or National Laboratories as required by the controlling document. TAs were produced and the controlling document was revised to clarify the requirements. Training Requirements Matrices were reviewed. No further discrepancies were identified.

LVMO-00-D-054

The DR noted that a work instruction had not been updated to reflect applicable American Society for Testing and Materials specifications, testing, and reporting requirements determined after initial issue of the work instruction. This was an isolated event, and no similar conditions were noted during review of other procurement documents and related work instructions.

LVMO-00-D-082

The DR identified documents on the OCRWM Program Documents Database as available for use, when those documents were known to have been cancelled or superseded by other documents on the database.

Corrective actions, further to those completed in DR YMSCO-99-D-102 (see above), involved revisions to Document Control Desk Instructions and the development and use of software to enable automated database update.

During the audit the database displays related to a number of known and recent procedure cancellation actions were reviewed. No additional discrepancies were identified.

LVMO-00-D-083

The DR noted a number of discrepancies in the list of M&TE maintained by the M&TE custodian. The Test Equipment Standards Usage Log and the M&TE List were reviewed for information related to a randomly selected sample of test equipment. No further discrepancies were identified.

6.0 RECOMMENDATIONS

The following recommendations are presented for consideration by appropriate CRWMS M&O management:

1. Most OCRWM program documents, e.g., System Description Documents, depend on information withdrawn from many other documents, many of which are developed and maintained by agencies external to the OCRWM, e.g., ANSI, IEEE, NRC, etc. For example, of 54 references cited in document SDD-ATS-SE-000001, Rev 1, ICN 1, 36 are to such documents. Maintenance of OCRWM program documents as related technical inputs evolve is important to maintenance of the technical adequacy and credibility of those documents. An OCRWM management system, similar to or as a part of the Document Input Reference System, should be developed to enable notification of an OCRWM document developer of a change to an input reference controlled externally to the OCRWM, which has occurred after the external reference was relied on by the developer to produce the OCRWM document.
2. NLP-3-35, Revision 0, "ESF Walk-Down for Quality Affecting Ground Support," should be cancelled. The construction activities to which the procedure applies have been completed and all related walk-down reports have been filed. The procedure applies to no future uncompleted work.
3. Requests for Clarification (RFC) are initiated and closed in accordance with YAP-3.7Q. RFCs typically apply to specifications and drawings for clarification of a requirement. RFCs should be tracked via a database to these specifications/drawings to give a historical perspective of these interpretations.
4. AP-2.17Q, Section 5.2, does not specify by what method the Testing & Performance Confirmation (T&PC) Manager notifies prospective users of TFM that the TFM use is approved/disapproved. Section 5.2 should be revised to include those methods by which reporting/planning organizations are notified by the T&PC organization of the approval/disapproval of the use of the TFM.
5. There has been no implementation of the process described in AP-6.1Q, Revision 5, "Controlled Documents," Subsection 5.10, "Document Owner's Annual Report," because of a lack of an automated database required to support the activities described and a lack of process controls for correct and current identification of document owners. The fact that the process has not been implemented raises questions regarding the value of or the need for the process in the context of a document control management process, which does not appear to have been adversely impacted by the lack of implementation. The value of and the necessity for the process should be reexamined. If found to be necessary as an element of an efficient and effective document control management process, efforts should be initiated to develop the required automated database capability, to provide required process controls, to validate the identification of document owners, and to execute the process described in Subsection 5.10. If found to be not necessary, AP-6.1Q should be revised to delete the description of the process.

6. NWI-ESF-038Q, Rev. 0, "Identification and Control of Items," contains titles for responsible persons that are outdated. The procedure should be revised to describe the responsible persons currently performing the specified activity.

7.0 LIST OF ATTACHMENTS

Attachment 1 – Personnel Contacted During the Audit
Attachment 2 – Summary Table of Audit Results

ATTACHMENT 1
YMSCO/M&O-ARC-00-11
Personnel Contacted During the Audit

Name	Organization	Pre-Audit Meeting	Contacted During Audit	Post-Audit Meeting
S. A. Adame	M&O, Human Resources and Training	X		
Duane Allred	QATSS, Quality Systems		X	
R. W. Andrews	M&O, Performance Assessment Department		X	
J. M. Armstrong	M&O, Material Management Team		X	
K. L. Ashe	M&O, Licensing	X		X
J. N. Bailey	M&O, Regulatory and Licensing	X		
C. F. Bartley	M&O, Process Improvement			X
G. L. Bates	M&O, Construction Engineering		X	
R. H. Belanger	M&O, Reference Control Team		X	
Lori Belnap	M&O, Information Management	X		X
R. B. Berlien	M&O, Internal Assessment Department		X	
Marshall Bishop	MTS, MTS/Project Support		X	
Marina Blackwell	M&O, Receipt/Distribution		X	
James Blaylock	DOE/OQA, OQA			X
Alice Boyles	M&O, Receipt/Distribution		X	
A. G. Burningham	M&O, Regulatory Compliance Team	X	X	X
C. J. Byrne	M&O, Testing & Performance Confirmation Section		X	
C. M. Caprio	M&O, Documents, Data, Records Department	X		
S. A. Carter	DOE/YMSCO, OPS/Business, Logistics, & Training	X		
Dorothy Callier	DOE/YMSCO, OPS/Contracts		X	X
E. M. Cikanek	M&O, Geotechnical Criteria		X	
J. J. Clark	M&O, Surface Facilities Operations	X	X	X
J. K. Clark	M&O, Waste Management & Repository Facilities			X
L. L. Colehour	M&O, Records Management Team	X		X
Drew Coleman	DOE/YMSCO, OPE/PMD/Scientific Facilities		X	
E. R. Cooper	DOE/YMSCO, OPE/Program Analysis		X	
H. R. Cox	QATSS, Site Quality		X	
L. D. Croft	M&O, Radiological and Regional Programs	X		X
S. R. Dana	QATSS, Quality Systems	X		
J. C. De La Garza	DOE/YMSCO, OPC/Director		X	
G. E. Dials	M&O, General Manager	X		X

Name	Organization	Pre-Audit Meeting	Contacted During Audit	Post-Audit Meeting
S. A. Docimo	M&O, Operations and Maintenance		X	
G. A. Donaldson	M&O, Regional Data Analysis Section		X	
C. L. Drummond	M&O, Training Records and Computer Training Section		X	
R. M. Dulin	M&O, Performance Safety and System Engineering	X		X
E. F Fitch	M&O, Office Engineering		X	
R. D. Foye	M&O, Office Engineering		X	
L. L. Galyon	QATSS, Quality Systems			X
C. R. Garrett	M&O, Title III Design Team		X	
Denise Gibson	M&O, Document Review		X	
S. W. Goodin	M&O, Title II Design – Subsurface		X	
Bijan Gorpani	M&O, Systems Engineering and Requirements Team		X	
J. A Gray	M&O, Technical Training Section		X	
G. W. Griffith	M&O, Surface Facilities Department	X		
R. J. Griffith	M&O, Office Engineering		X	
F. N. Habashi	M&O, Systems Engineering and Requirements Team		X	
B. V. Hamilton-Ray	DOE/YMSCO, OPS/Contracts	X		
P. R. Hammond	M&O, Configuration Management Team		X	
C. E. Hampton	DOE/YMSCO, OPE/QA Specialist	X	X	X
P. G. Harrington	DOE/YMSCO, OPE/PMD/Systems Engineering		X	
R. P. Hasson	QATSS, QA Verification	X		
L. R. Hayes	M&O, Systems Engineering Department		X	
Colin Heath	M&O, Technical Support	X		X
R. W. Henderson	M&O, Las Vegas Procurement Section			X
T. J. Higgins	M&O, Surface Facilities Operations	X		
D. G. Horton	DOE/YMSCO, Deputy Project Manager – Technical	X	X	X
B. J. Howe	M&O, Engineering Document Control Team		X	
P. J. Jakus	M&O, Field Engineering Department		X	
R. L. Johnson	M&O, Office Engineering		X	
G. W. Jones	M&O, Radiation Program Section		X	
M. A. Kavchak	QATSS, Quality Systems		X	
R. P. Keele	QATSS, Quality Systems	X		X
J. W. Keifer	M&O, Title II Design – Subsurface		X	
D. L. Kirby	MTS, MTS/Compliance Management	X	X	X

Name	Organization	Pre-Audit Meeting	Contacted During Audit	Post-Audit Meeting
D. M. Kunihiro	M&O, Executive Staff Assistant	X		
C. C. Lewis	M&O, Sample Management and Drilling Department		X	
Carolyn Makaena	M&O, Las Vegas Procurement Section		X	
L. M. Mantor	M&O, Receipt/Distribution		X	
J. S. Martin	QATSS, Site Quality		X	
M. G. McDaniel	M&O, Product Assurance	X		X
J. P. McGoldrick	M&O, Las Vegas Procurement Section		X	
B. L. McGonigle	M&O, Sample Management and Drilling Department		X	
L. W. McGrath	M&O, Las Vegas Procurement Section	X		X
M. J. McGrath	M&O, Technical Input Management Team		X	
D. G. McKenzie	M&O, Subsurface Design Section	X	X	X
R. A. Mele	MTS, MTS/Compliance Management	X	X	X
S. P. Mellington	DOE/YMSCO, OPE	X		
H. J. Minwalla	M&O, Systems Engineering and Requirements Team		X	
T. A. Misiak	M&O, Title II Design – Civil/Structural		X	
R. A. Morgan	M&O, Internal Assessment Department		X	
S. A. Morris	DOE/YMSCO, OL&RC/Site Recommendation		X	
L. R. Morrison	M&O, Test Facilities Design		X	
E. P. Opelski	QATSS, QA Verification			X
N. M. Payton	M&O, Material Management Team		X	
N. E. Pettit	M&O, Systems Engineering and Requirements Team		X	
L. F. Quering	DOE/YMSCO, OPS/Business, Logistics, & Training	X		
Howard Rael	M&O, Surface Based Testing		X	
D. S. Rhodes	M&O, Technical Analysis Team		X	
D. M. Ridolfi	DOE/YMSCO, OPS/Contracts		X	
S. L. Rives	DOE/YMSCO, PM/Chief Counsel	X		
K. W. Roesner	M&O, Regional Data Analysis Section		X	
S. L. Rouse	DOE/YMSCO, OPS/Business, Logistics and Training	X	X	X
P. R. Russell	DOE/YMSCO, OPE/PMD/Waste Package		X	
T. E. Ryan	M&O, Process Improvement Team	X		
B. M. Savarise	M&O, Web Publishing and Document Review Team		X	
J. A. Schmitt	DOE/YMSCO, OPS/Business, Logistics & Training	X		
J. M. Schrecongost	DOE/YMSCO, OIM/Las Vegas Team	X		X
R. L. Schreiner	M&O, Subsurface Facilities	X		

Name	Organization	Pre-Audit Meeting	Contacted During Audit	Post-Audit Meeting
K. L. Schulenberg	M&O, Construction Engineering		X	
D. L. Seamans	M&O, Engineering Document Control Team		X	
M. D. Sellers	M&O, Testing and Performance Confirmation		X	
Heather Seymour	M&O, Document Review		X	
C. E. Smith	M&O, Document Review		X	
Nancy Smith	MTS, MTS/Business Processes		X	
C. D. Sorenson	M&O, Environmental, Safety and Health			X
Yumi Stafford	M&O, Las Vegas Procurement Section		X	
N. D. Sudan	M&O, Systems Engineering and Requirements Team		X	
J. R. Summerson	DOE/YMSCO, OPC/Planning		X	
J. E. Timmons	QATSS, Quality Systems	X		
C. B. Thom	M&O, Systems Engineering and Requirements Team	X	X	
Kathleen Thompson	M&O, Records and Documents Customer Service		X	
Richard Toft	MTS, MTS Las Vegas			X
T. J. Tomek	M&O, Office Engineering Department – Technical Support		X	
Vic Trebules	DOE/YMSCO, OPC	X		X
P. E. Turner	M&O, Training Department	X	X	X
D. R. Warriner	DOE/YMSCO, OIM/ Las Vegas Team	X		X
J. L. Wiggins	M&O, Reference Control Team – Analytical Support		X	
D. R. Wilkins	M&O, Waste Management and Repository Facilities	X		X
D. R. Williams	DOE/YMSCO, OL&RC	X		X
M. R. Wisenburg	M&O, Regulatory and Licensing		X	
J. G. Withrow	M&O, Engineering Document Control Team		X	
K. M. Wolverton	M&O, Regional Data Analysis Section	X	X	X
F. M. Wong	MTS, MTS Engineering		X	
J. L. Younker	M&O, Applied Research and Testing Programs, Division Manager	X		X
F. N. Zinkevich	M&O, Applied Research and Testing Programs	X		X

LEGEND:

DOE/OQA – Department of Energy/Office of Quality Assurance
DOE/YMSCO – Department of Energy/Yucca Mountain Site Characterization Office
M&O – Civilian Radioactive Waste Management System Management and Operating Contractor
MTS – Management Technical Support
OIM – Office of Information Management
OL&RC – Office of Licensing & Regulatory Compliance

OPC – Office of Project Control
OPE – Office of Project Execution
OPS – Office of Project Support
PM – Project Management
PMD – Project Management Division
QATSS – Quality Assurance Technical Support Services

ATTACHMENT 2
YMSCO/M&O-ARC-00-11
Summary Table of Audit Results

PROGRAM ELEMENT	IMPLEMENTING DOCUMENTS	DETAILS (CHECKLIST)	DEFICIENCIES	RECOMMENDATIONS	PROGRAM ADEQUACY	PROCEDURE COMPLIANCE	OVERALL
1	QAP 1.1	Y-Pg. 1,2	N	N	SAT	SAT	SAT
	QAP-1-0	M-Pg. 1,2,3	N	N	SAT	SAT	
2	AP-2.1Q	Y-Pg. 4,5	N	N	SAT	SAT	SAT
		M-Pg. 5,6	N	N	SAT	SAT	
	AP-2.2Q	Y-Pg. 6,7	N	N	SAT	SAT	
		M-Pg. 7,8	N	N	SAT	SAT	
	AP-2.12Q	Y-Pg. 11-14	CDA #1	N	SAT	SAT	
	AP-2.20Q	Y-Pg. 15,16,17	N	N	SAT	SAT	
		M-Pg. 9,10	N	N	SAT	SAT	
	LP-TRN-001-M&O	M-Pg. 11	N	N	SAT	SAT	
3	QAP-2-6	M-Pg. 12,13,14	N	N	SAT	NI	SAT
	YAP-2.7Q	Y-Pg. 8, 9, 10	N	N	SAT	SAT	
	S D D	AP-2.13Q	M-Pg. 53,54,55	N	N	SAT	
		AP-2.14Q	M-Pg. 56,57,58	N	N	SAT	
		AP-2.15Q	M-Pg. 59,60	N	N	SAT	
		AP-3.4Q	M-Pg. 61	CDA #2	N	SAT	
		AP-3.11Q	M-Pg. 62-65	N	N	SAT	
		AP-3.14Q	M-Pg. 65,66,67	N	N	SAT	
	D E S I G N	AP-3.15Q	M-Pg. 68-71	N	REC #1	SAT	
		AP-3.9Q	M-Pg. 15,16,17	N	N	SAT	
		AP-3.17Q	M-Pg. 18,19,20	N	N	SAT	
		AP-3.19Q	M-Pg. 21-25	N	N	SAT	
		AP-3.20Q	M-Pg. 26-32	N	N	SAT	
		LP-3.21Q-M&O	M-Pg. 35,36	N	N	SAT	
		LP-3.22Q-M&O	M-Pg. 37,38,39	N	N	SAT	
		NLP-3-29	M-Pg. 40,41	N	N	SAT	
		NLP-3-31	M-Pg. 42,43,44	N	N	SAT	
		NLP-3-34	M-Pg. 45,46,47	LVMO-00-D-130	N	SAT	
		NLP-3-35	M-Pg. 48	N	REC #2	SAT	
		NLP-3-36	M-Pg. 49-52	N	N	SAT	
	C O N T. T F M	YAP-3.7Q	M-Pg. 33,34	DIR 00-20	REC #3	SAT	
		AP-2.17Q	M-Pg. 160-162	CDA #3	REC #4	SAT	
		NWI-ESF-016Q	M-Pg. 163	N	N	SAT	
		NWI-ESF-035Q	M-Pg. 164	N	N	SAT	
		NMI-ESF-007Q	M-Pg. 165	N	N	SAT	
4	LP-4.1Q-OCRWM	Y-Pg. 24-27	N	N	SAT	SAT	SAT
	YLP-4.1Q-YMSCO	Y-Pg. 18-23	YMSCO-00-D-131	N	SAT	SAT	
5	AP-5.1Q	Y-Pg. 30-33	N	N	SAT	SAT	SAT
		M-Pg. 75-78	N	N	SAT	SAT	
	AP-5.2Q	M-Pg. 79,80,81	N	N	SAT	SAT	
	LP-5.1Q-OCRWM	Y-Pg. 34-37	N	N	SAT	SAT	
	QAP 5.1	Y-Pg. 28,29	N	N	SAT	SAT	
6		M-Pg. 74	N	N	SAT	SAT	SAT
	AP-6.1Q	Y-Pg. 38,39,40	N	N	SAT	SAT	
		M-Pg. 83-88	N	REC #5	SAT	SAT	
	AP-6.28Q	Y-Pg. 41,42,43	N	N	SAT	NI	
7		M-Pg. 89-91	N	N	SAT	NI	SAT
	AP-7.4Q	Y-Pg. 52,53,54	N	N	SAT	SAT	
		M-Pg. 105-107	N	N	SAT	SAT	
	AP-7.5Q	Y-Pg. 44-51	N	N	SAT	SAT	
		M-Pg. 101-104	N	N	SAT	SAT	
8	AP-7.6Q	M-Pg. 95-100	N	N	SAT	SAT	SAT
	QAP-7-3	M-Pg. 92,93,94	N	N	SAT	SAT	
8	NWI-ESF-038Q	M-Pg. 108,109	N	REC #6	SAT	SAT	SAT
9	NWI-ESF-026Q	M-Pg. 113,114	N	N	SAT	NI	SAT
	NWI-ESF-027Q	M-Pg. 112	N	N	SAT	SAT	
12	YAP-12.3Q	M-Pg. 116-127	N	N	SAT	SAT	SAT

PROGRAM ELEMENT	IMPLEMENTING DOCUMENTS	DETAILS (CHECKLIST)	DEFICIENCIES	RECOMMENDATIONS	PROGRAM ADEQUACY	PROCEDURE COMPLIANCE	OVERALL
13	NWI-ESF-047Q	M-Pg. 129	N	N	SAT	SAT	SAT
14	LP-CON-001Q-M&O	M-Pg. 130,131	N	N	SAT	SAT	SAT
	NWI-ESF-044Q	M-Pg. 132	N	N	SAT	SAT	
15	YAP-15.1Q	Y-Pg. 55	N	N	SAT	NI	SAT
		M-Pg. 133,134	N	N	SAT	SAT	
16	AP-16.1Q	Y-Pg. 56-59	N	N	SAT	SAT	SAT
		M-Pg. 135-138	N	N	SAT	SAT	
	AP-16.4	M-Pg. 139,140	N	N	SAT	SAT	
	LP-SMF-002Q	M-Pg. 150	N	N	SAT	SAT	
SUPP II	NWI-SMF-001Q	M-Pg. 146-148	N	N	SAT	SAT	SAT
	NWI-SMF-002Q	M-Pg. 149	N	N	SAT	SAT	
	YAP-SII.1Q	Y-Pg. 61,62	N	N	SAT	SAT	
		M-Pg. 141	N	N	SAT	SAT	
	YAP-SII.2Q	M-Pg. 142,143	N	N	SAT	SAT	
	YAP-SII.4Q	M-Pg. 144,145	N	N	SAT	SAT	
	AP-SIII.2Q	Y-Pg. 63-69	N	N	SAT	SAT	
SUPP III	YAP-SIII.4Q	Y-Pg. 70-75	N	N	SAT	SAT	SAT
	YAP-SIII.5Q	Y-Pg. 76-79	N	N	SAT	SAT	
	SUPP IV	NWI-ESF-008Q	M-Pg. 151,153	N	N	SAT	
NWI-ESF-009Q		M-Pg. 152,154	N	N	SAT	SAT	
NWI-ESF-010Q		M-Pg. 155	N	N	SAT	SAT	
APP C	AP-AC.1Q	Y-Pg. 82-85	N	N	SAT	NI	SAT
		M-Pg. 156-159	N	N	SAT	NI	
Total:		85 Pgs. – Y 165 Pgs. - M	2 DRs 1 DIR 3 CDAs	6 RECs	SATISFACTORY		

LEGEND: CDA-Corrected During Audit; DIR-Deficiency Identification and Referral; DR-Deficiency Report; N-None; NI-Not Implemented; Y-YMSCO; M-M&O; SAT-Satisfactory; UNSAT-Unsatisfactory